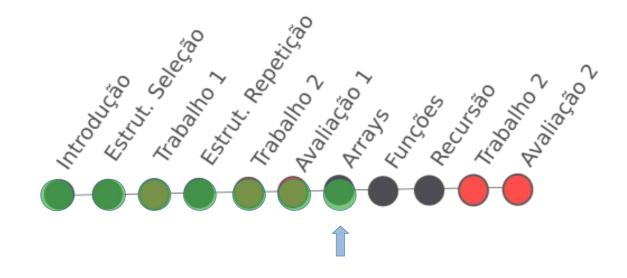
## **Tópico 06 - Arrays - Strings e Código Ascii**

Prof. André Gustavo Hochuli

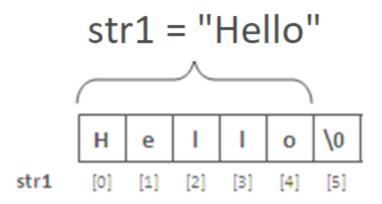
#### Plano de Aula

- Definição de Strings
- Código Ascii
- Exercícios



### **Arrays - Strings**

• São arrays de caracteres:



# **Arrays - Strings**

Podem ser iterados como um vetor qualquer:

```
str1 = 'Hello'
tam = len(str1)

for i in range(0,tam,1):
    print(str1[i])

1
```

### Tabela ASCII

#### • Letra -> Número

		Dec Hex	Oct	HTML	Chr	Dec Hex	Oct	HTML	Chr	Dec Hex	Oct HTML	Chr
000	NULL	32 20	040		Space	64 40	100	@	@	<b>96</b> 60	140 `	`
001	Start of Header	33 21	041	!	1	65 41	101	A	Α	97 61	141 a	a
002	Start of Text	34 22	042	"		66 42	102	B	В	98 62	142 b	b
003	End of Text	<b>35</b> 23	043	#	#	<b>67</b> 43	103	C		99 63	143 c	C
004	End of Transmission	36 24	044	\$	\$	68 44	104	D	D	100 64	144 d	d
005	Enquiry	37 25	045	%	%	69 45	105	E	Е	101 65	145 e	е
006	Acknowledgment	38 26	046	&	&	70 46	106		F	102 66	146 f	f
007	Bell	39 27	047	'	1	71 47	107	G	G	103 67	147 g	g
010	Backspace	40 28	050	(	(	72 48	110	H	Н	<b>104</b> 68	150 h	h
011	Horizontal Tab	41 29	051	)	)	73 49	111	I	I	<b>105</b> 69	151 i	i
012	Line feed	42 2A	052	*	*	74 4A	112	J	J	106 6A	152 j	j
013	Vertical Tab	43 2B	053	+	+	75 4B	113	K	K	107 6B	153 k	k
014	Form feed	44 2C	054	,	,	76 4C	114	L	L	108 6C	154 l	
015	Carriage return	45 2D	055	-	-	77 4D	115	M	M	109 6D	155 m	m
016	Shift Out	46 2E	056	.		78 4E	116	N	N	110 6E	156 n	n
017	Shift In	47 2F	057	/	/	79 4F	117	O	0	111 6F	157 o	0
020	Data Link Escape	48 30	060	0	0	<b>80</b> 50	120	P	Р	112 70	160 p	р
021	Device Control 1	49 31	061	1	1	81 51	121	Q	Q	113 71	161 q	q
022	Device Control 2	<b>50</b> 32	062	2	2	<b>82</b> 52	122	R	R	<b>114</b> 72	162 r	r
023	Device Control 3	<b>51</b> 33	063	3	3	83 53	123	S	S	<b>115</b> 73	163 s	S
024	Device Control 4	52 34	064	4	4	84 54	124	T	T	116 74	164 t	t
025	Negative Ack.	53 35	065	5	5	<b>85</b> 55	125	U	U	<b>117</b> 75	165 u	u
026	Synchronous idle	54 36	066	6	6	<b>86</b> 56	126	V	V	118 76	166 v	V
027	End of Trans. Block	<b>55</b> 37	067	7	7	87 57	127	W	W	119 77	167 w	W
030	Cancel	<b>56</b> 38	070	8	8	<b>88</b> 58	130	X	Χ	<b>120</b> 78	170 x	х
031	End of Medium	<b>57</b> 39	071	9	9	<b>89</b> 59	131	Y	Υ	121 79	171 y	У
032	Substitute	58 3A	072	:	:	90 5A	132	Z	Z	122 7A	172 z	z
033	Escape	<b>59</b> 3B	073	;	;	91 5B	133	[	[	123 7B	173 {	{
034	File Separator	60 3C	074	<	<	92 5C	134	\	\	124 7C	174	
035	Group Separator	<b>61</b> 3D	075	=	=	93 5D	135	]	1	125 7D	175 }	}
036	Record Separator	62 3E	076	>	>	94 5E	136	^	٨	126 7E	176 ~	~
037	Unit Separator	63 3F	077	?	?	95 5F	137	_		127 7F	177	Del
	002 003 004 005 006 007 010 012 013 014 015 016 020 021 022 023 024 025 026 030 031 032 033 034 035	002 Start of Text 003 End of Text 004 End of Text 005 Enquiry 006 Acknowledgment 007 Bell 010 Backspace 011 Horizontal Tab 012 Line feed 013 Vertical Tab 014 Form feed 015 Carriage return 016 Shift Out 017 Shift In 020 Data Link Escape 021 Device Control 1 022 Device Control 2 023 Device Control 2 024 Device Control 4 025 Synchronous idle 026 Synchronous idle 037 End of Trans. Block 038 Cancel 039 Escape 030 File Separator 031 Group Separator 032 Group Separator 033 Grecord Separator	002         Start of Text         34 22           003         End of Text         35 23           004         End of Transmission         36 24           005         Enquiry         37 25           006         Acknowledgment         38 26           007         Bell         39 27           010         Backspace         40 28           011         Horizontal Tab         41 29           012         Line feed         42 2A           013         Vertical Tab         43 2B           014         Form feed         44 2C           015         Carriage return         45 2D           016         Shift Out         46 2E           017         Shift In         47 2F           020         Data Link Escape         48 30           021         Device Control 1         49 31           022         Device Control 2         50 32           023         Device Control 3         51 33           024         Device Control 4         52 34           025         Synchronous idle         54 36           026         Synchronous idle         54 36           027         End of Trans. Block <td< td=""><td>002         Start of Text         34 22         042           003         End of Text         35 23         043           004         End of Transmission         36 24         044           005         Enquiry         37 25         045           006         Acknowledgment         38 26         046           007         Bell         39 27         047           010         Backspace         40 28         050           011         Horizontal Tab         41 29         051           012         Line feed         42 2A         052           013         Vertical Tab         43 2B         053           014         Form feed         44 2C         054           015         Carriage return         45 2D         055           016         Shift Out         46 2E         056           017         Shift In         47 2F         057           020         Data Link Escape         48 30         060           021         Device Control 1         49 31         061           022         Device Control 2         50 32         062           023         Device Control 3         51 33         063</td><td>002         Start of Text         34         22         042         "           003         End of Text         35         23         043         #           004         End of Transmission         36         24         044         \$           005         Enquiry         37         25         045         %           006         Acknowledgment         38         26         046         &amp;           007         Bell         39         27         047         '           010         Backspace         40         28         050         (           011         Horizontal Tab         41         29         051         *           012         Line feed         42         2A         052         *           013         Vertical Tab         43         2B         053         +           014         Carriage return         45         2D         055         .           015         Shift Out         46         2E         056         .           017         Shift In         47         2F         057         /           020         <td< td=""><td>002         Start of Text         34         22         042         "         "           003         End of Text         35         23         043         #         \$           004         End of Transmission         36         24         044         \$         \$           005         Enquiry         37         25         045         %         %           006         Acknowledgment         38         26         046         &amp;         &amp;           007         Bell         39         27         047         '         '           010         Backspace         40         28         050         (         (           011         Horizontal Tab         41         29         051         *         *           012         Line feed         42         2A         052         *         *           013         Vertical Tab         43         28         053         )         +           014         Form feed         44         2C         054         ,         -           015         Carriage return         45         2D         055         -</td><td>002         Start of Text         34 22 042 8#034; "         66 42           003         End of Text         35 23 043 8#035; #         67 43           004         End of Transmission         36 24 044 8#036; \$         68 44           005         Enquiry         37 25 045 8#037; %         69 45           006         Acknowledgment         38 26 046 8#038; 8         70 46           007         Bell         39 27 047 8#039; '         71 47           010         Backspace         40 28 050 8#040; (         72 48           011         Horizontal Tab         41 29 051 8#041; )         73 49           012         Line feed         42 2A 052 8#042; *         74 4A           013         Vertical Tab         43 2B 053 8#043; +         75 48           014         Form feed         44 2C 054 8#044; ,         76 4C           015         Carriage return         45 2D 055 8#045; -         77 44           015         Shift Out         46 2E 056 8#046; .         78 4E           017         Shift In         47 2F 057 8#047; /         79 4F           020         Data Link Escape         48 30 060 8#048; 0         80 50           021         Device Control 1         49 31 061 8#049; 1         81 51<td>002         Start of Text         34 22 042 8#034; "         66 42 102           003         End of Text         35 23 043 8#035; #         67 43 103           004         End of Transmission         36 24 044 8#036; \$         68 44 104           005         Enquiry         37 25 045 8#037; %         69 45 105           006         Acknowledgment         38 26 046 8#038; 8         70 46 106           007         Bell         39 27 047 8#039; '         71 47 107           010         Backspace         40 28 050 8#040; (         72 48 110           011         Horizontal Tab         41 29 051 8#041; )         73 49 111           012         Line feed         42 2A 052 8#042; *         74 4A 112           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113           014         Form feed         44 2C 054 8#04; ,         76 4C 114           015         Carriage return         45 2D 055 8#045; -         77 4D 115           016         Shift Out         46 2E 056 8#046; .         78 4E 116           017         Shift In         47 2F 057 8#047; /         79 4F 117           020         Data Link Escape         48 30 060 8#048; 0         80 50 120           021         Device Control 1<td>002         Start of Text         34 22 042 " "         66 42 102 B           003         End of Text         35 23 043 # #         67 43 103 B           004         End of Transmission         36 24 044 \$ \$         68 44 104 D           005         Enquiry         37 25 045 % %         69 45 105 E           006         Acknowledgment         38 26 046 &amp; &amp; 70 46 106 F           007         Bell         39 27 047 ' ' 71 47 107 H           010         Backspace         40 28 050 ( ( 72 48 110 H           011         Horizontal Tab         41 29 051 ) ) 73 49 111 I           012         Line feed         42 2A 052 * * 74 4A 112 J           013         Vertical Tab         43 2B 053 + + 75 4B 113 K           014         Form feed         44 2C 054 , - 76 4C 114 L           015         Carriage return         45 2D 055 - - 77 4D 115 M           016         Shift Out         46 2E 056 . - 78 4E 116 N           020         Data Link Escape         48 30 060 0 0 80 50 120 P           021         Device Control 1         49 31 061 1 1 81 51 121 Q           022         Device Control 3         51 33 063 3 3 83 53 123 S</td><td>  002   Start of Text   34   22   042   8#034;   "   66   42   102   8#066;   B   003   End of Text   35   23   043   8#035;   #   67   43   103   8#067;   C   040   End of Transmission   36   24   044   8#036;   \$   68   44   104   8#068;   D   005   Enquiry   37   25   045   8#037;   %   69   45   105   8#069;   E   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#071;   G   07   6   07   8#071;   G   07   6   07   8#071;   G   07   6   07   08   08   08   08   07   04   07   04   07   08   07   07   07   07   07   07</td><td>002         Start of Text         34 22 042 8#034; "         66 42 102 8#066; B         98 62           003         End of Text         35 23 043 8#035; #         67 43 103 8#067; C         99 63           004         End of Transmission         36 24 044 8#036; \$         68 44 104 8#068; D         100 64           005         Enquiry         37 25 045 8#037; %         69 45 105 8#069; E         101 65           006         Acknowledgment         38 26 046 8#038; 8         70 46 106 8#070; F         102 66           010         Bell         39 27 047 8#039; '         71 47 107 48/074; G         103 67           010         Backspace         40 28 050 8#040; (         72 48 110 8#072; H         104 68           011         Horizontal Tab         41 29 051 8#041; )         73 49 111 8#073; I         105 69           012         Line feed         42 2A 052 8#042; *         74 4A 112 8#074; J         106 6A           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113 8#075; K         107 6B           014         Form feed         44 2C 054 8#044; -         76 4C 114 8#076; L         108 6C           015         Carriage return         45 2D 055 8#045; -         77 4D 115 8#077; M         109 6D           015         Shift Out</td><td>  Start of Text   34 22 042</td></td></td></td<></td></td<>	002         Start of Text         34 22         042           003         End of Text         35 23         043           004         End of Transmission         36 24         044           005         Enquiry         37 25         045           006         Acknowledgment         38 26         046           007         Bell         39 27         047           010         Backspace         40 28         050           011         Horizontal Tab         41 29         051           012         Line feed         42 2A         052           013         Vertical Tab         43 2B         053           014         Form feed         44 2C         054           015         Carriage return         45 2D         055           016         Shift Out         46 2E         056           017         Shift In         47 2F         057           020         Data Link Escape         48 30         060           021         Device Control 1         49 31         061           022         Device Control 2         50 32         062           023         Device Control 3         51 33         063	002         Start of Text         34         22         042         "           003         End of Text         35         23         043         #           004         End of Transmission         36         24         044         \$           005         Enquiry         37         25         045         %           006         Acknowledgment         38         26         046         &           007         Bell         39         27         047         '           010         Backspace         40         28         050         (           011         Horizontal Tab         41         29         051         *           012         Line feed         42         2A         052         *           013         Vertical Tab         43         2B         053         +           014         Carriage return         45         2D         055         .           015         Shift Out         46         2E         056         .           017         Shift In         47         2F         057         /           020 <td< td=""><td>002         Start of Text         34         22         042         "         "           003         End of Text         35         23         043         #         \$           004         End of Transmission         36         24         044         \$         \$           005         Enquiry         37         25         045         %         %           006         Acknowledgment         38         26         046         &amp;         &amp;           007         Bell         39         27         047         '         '           010         Backspace         40         28         050         (         (           011         Horizontal Tab         41         29         051         *         *           012         Line feed         42         2A         052         *         *           013         Vertical Tab         43         28         053         )         +           014         Form feed         44         2C         054         ,         -           015         Carriage return         45         2D         055         -</td><td>002         Start of Text         34 22 042 8#034; "         66 42           003         End of Text         35 23 043 8#035; #         67 43           004         End of Transmission         36 24 044 8#036; \$         68 44           005         Enquiry         37 25 045 8#037; %         69 45           006         Acknowledgment         38 26 046 8#038; 8         70 46           007         Bell         39 27 047 8#039; '         71 47           010         Backspace         40 28 050 8#040; (         72 48           011         Horizontal Tab         41 29 051 8#041; )         73 49           012         Line feed         42 2A 052 8#042; *         74 4A           013         Vertical Tab         43 2B 053 8#043; +         75 48           014         Form feed         44 2C 054 8#044; ,         76 4C           015         Carriage return         45 2D 055 8#045; -         77 44           015         Shift Out         46 2E 056 8#046; .         78 4E           017         Shift In         47 2F 057 8#047; /         79 4F           020         Data Link Escape         48 30 060 8#048; 0         80 50           021         Device Control 1         49 31 061 8#049; 1         81 51<td>002         Start of Text         34 22 042 8#034; "         66 42 102           003         End of Text         35 23 043 8#035; #         67 43 103           004         End of Transmission         36 24 044 8#036; \$         68 44 104           005         Enquiry         37 25 045 8#037; %         69 45 105           006         Acknowledgment         38 26 046 8#038; 8         70 46 106           007         Bell         39 27 047 8#039; '         71 47 107           010         Backspace         40 28 050 8#040; (         72 48 110           011         Horizontal Tab         41 29 051 8#041; )         73 49 111           012         Line feed         42 2A 052 8#042; *         74 4A 112           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113           014         Form feed         44 2C 054 8#04; ,         76 4C 114           015         Carriage return         45 2D 055 8#045; -         77 4D 115           016         Shift Out         46 2E 056 8#046; .         78 4E 116           017         Shift In         47 2F 057 8#047; /         79 4F 117           020         Data Link Escape         48 30 060 8#048; 0         80 50 120           021         Device Control 1<td>002         Start of Text         34 22 042 " "         66 42 102 B           003         End of Text         35 23 043 # #         67 43 103 B           004         End of Transmission         36 24 044 \$ \$         68 44 104 D           005         Enquiry         37 25 045 % %         69 45 105 E           006         Acknowledgment         38 26 046 &amp; &amp; 70 46 106 F           007         Bell         39 27 047 ' ' 71 47 107 H           010         Backspace         40 28 050 ( ( 72 48 110 H           011         Horizontal Tab         41 29 051 ) ) 73 49 111 I           012         Line feed         42 2A 052 * * 74 4A 112 J           013         Vertical Tab         43 2B 053 + + 75 4B 113 K           014         Form feed         44 2C 054 , - 76 4C 114 L           015         Carriage return         45 2D 055 - - 77 4D 115 M           016         Shift Out         46 2E 056 . - 78 4E 116 N           020         Data Link Escape         48 30 060 0 0 80 50 120 P           021         Device Control 1         49 31 061 1 1 81 51 121 Q           022         Device Control 3         51 33 063 3 3 83 53 123 S</td><td>  002   Start of Text   34   22   042   8#034;   "   66   42   102   8#066;   B   003   End of Text   35   23   043   8#035;   #   67   43   103   8#067;   C   040   End of Transmission   36   24   044   8#036;   \$   68   44   104   8#068;   D   005   Enquiry   37   25   045   8#037;   %   69   45   105   8#069;   E   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#071;   G   07   6   07   8#071;   G   07   6   07   8#071;   G   07   6   07   08   08   08   08   07   04   07   04   07   08   07   07   07   07   07   07</td><td>002         Start of Text         34 22 042 8#034; "         66 42 102 8#066; B         98 62           003         End of Text         35 23 043 8#035; #         67 43 103 8#067; C         99 63           004         End of Transmission         36 24 044 8#036; \$         68 44 104 8#068; D         100 64           005         Enquiry         37 25 045 8#037; %         69 45 105 8#069; E         101 65           006         Acknowledgment         38 26 046 8#038; 8         70 46 106 8#070; F         102 66           010         Bell         39 27 047 8#039; '         71 47 107 48/074; G         103 67           010         Backspace         40 28 050 8#040; (         72 48 110 8#072; H         104 68           011         Horizontal Tab         41 29 051 8#041; )         73 49 111 8#073; I         105 69           012         Line feed         42 2A 052 8#042; *         74 4A 112 8#074; J         106 6A           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113 8#075; K         107 6B           014         Form feed         44 2C 054 8#044; -         76 4C 114 8#076; L         108 6C           015         Carriage return         45 2D 055 8#045; -         77 4D 115 8#077; M         109 6D           015         Shift Out</td><td>  Start of Text   34 22 042</td></td></td></td<>	002         Start of Text         34         22         042         "         "           003         End of Text         35         23         043         #         \$           004         End of Transmission         36         24         044         \$         \$           005         Enquiry         37         25         045         %         %           006         Acknowledgment         38         26         046         &         &           007         Bell         39         27         047         '         '           010         Backspace         40         28         050         (         (           011         Horizontal Tab         41         29         051         *         *           012         Line feed         42         2A         052         *         *           013         Vertical Tab         43         28         053         )         +           014         Form feed         44         2C         054         ,         -           015         Carriage return         45         2D         055         -	002         Start of Text         34 22 042 8#034; "         66 42           003         End of Text         35 23 043 8#035; #         67 43           004         End of Transmission         36 24 044 8#036; \$         68 44           005         Enquiry         37 25 045 8#037; %         69 45           006         Acknowledgment         38 26 046 8#038; 8         70 46           007         Bell         39 27 047 8#039; '         71 47           010         Backspace         40 28 050 8#040; (         72 48           011         Horizontal Tab         41 29 051 8#041; )         73 49           012         Line feed         42 2A 052 8#042; *         74 4A           013         Vertical Tab         43 2B 053 8#043; +         75 48           014         Form feed         44 2C 054 8#044; ,         76 4C           015         Carriage return         45 2D 055 8#045; -         77 44           015         Shift Out         46 2E 056 8#046; .         78 4E           017         Shift In         47 2F 057 8#047; /         79 4F           020         Data Link Escape         48 30 060 8#048; 0         80 50           021         Device Control 1         49 31 061 8#049; 1         81 51 <td>002         Start of Text         34 22 042 8#034; "         66 42 102           003         End of Text         35 23 043 8#035; #         67 43 103           004         End of Transmission         36 24 044 8#036; \$         68 44 104           005         Enquiry         37 25 045 8#037; %         69 45 105           006         Acknowledgment         38 26 046 8#038; 8         70 46 106           007         Bell         39 27 047 8#039; '         71 47 107           010         Backspace         40 28 050 8#040; (         72 48 110           011         Horizontal Tab         41 29 051 8#041; )         73 49 111           012         Line feed         42 2A 052 8#042; *         74 4A 112           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113           014         Form feed         44 2C 054 8#04; ,         76 4C 114           015         Carriage return         45 2D 055 8#045; -         77 4D 115           016         Shift Out         46 2E 056 8#046; .         78 4E 116           017         Shift In         47 2F 057 8#047; /         79 4F 117           020         Data Link Escape         48 30 060 8#048; 0         80 50 120           021         Device Control 1<td>002         Start of Text         34 22 042 " "         66 42 102 B           003         End of Text         35 23 043 # #         67 43 103 B           004         End of Transmission         36 24 044 \$ \$         68 44 104 D           005         Enquiry         37 25 045 % %         69 45 105 E           006         Acknowledgment         38 26 046 &amp; &amp; 70 46 106 F           007         Bell         39 27 047 ' ' 71 47 107 H           010         Backspace         40 28 050 ( ( 72 48 110 H           011         Horizontal Tab         41 29 051 ) ) 73 49 111 I           012         Line feed         42 2A 052 * * 74 4A 112 J           013         Vertical Tab         43 2B 053 + + 75 4B 113 K           014         Form feed         44 2C 054 , - 76 4C 114 L           015         Carriage return         45 2D 055 - - 77 4D 115 M           016         Shift Out         46 2E 056 . - 78 4E 116 N           020         Data Link Escape         48 30 060 0 0 80 50 120 P           021         Device Control 1         49 31 061 1 1 81 51 121 Q           022         Device Control 3         51 33 063 3 3 83 53 123 S</td><td>  002   Start of Text   34   22   042   8#034;   "   66   42   102   8#066;   B   003   End of Text   35   23   043   8#035;   #   67   43   103   8#067;   C   040   End of Transmission   36   24   044   8#036;   \$   68   44   104   8#068;   D   005   Enquiry   37   25   045   8#037;   %   69   45   105   8#069;   E   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#071;   G   07   6   07   8#071;   G   07   6   07   8#071;   G   07   6   07   08   08   08   08   07   04   07   04   07   08   07   07   07   07   07   07</td><td>002         Start of Text         34 22 042 8#034; "         66 42 102 8#066; B         98 62           003         End of Text         35 23 043 8#035; #         67 43 103 8#067; C         99 63           004         End of Transmission         36 24 044 8#036; \$         68 44 104 8#068; D         100 64           005         Enquiry         37 25 045 8#037; %         69 45 105 8#069; E         101 65           006         Acknowledgment         38 26 046 8#038; 8         70 46 106 8#070; F         102 66           010         Bell         39 27 047 8#039; '         71 47 107 48/074; G         103 67           010         Backspace         40 28 050 8#040; (         72 48 110 8#072; H         104 68           011         Horizontal Tab         41 29 051 8#041; )         73 49 111 8#073; I         105 69           012         Line feed         42 2A 052 8#042; *         74 4A 112 8#074; J         106 6A           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113 8#075; K         107 6B           014         Form feed         44 2C 054 8#044; -         76 4C 114 8#076; L         108 6C           015         Carriage return         45 2D 055 8#045; -         77 4D 115 8#077; M         109 6D           015         Shift Out</td><td>  Start of Text   34 22 042</td></td>	002         Start of Text         34 22 042 8#034; "         66 42 102           003         End of Text         35 23 043 8#035; #         67 43 103           004         End of Transmission         36 24 044 8#036; \$         68 44 104           005         Enquiry         37 25 045 8#037; %         69 45 105           006         Acknowledgment         38 26 046 8#038; 8         70 46 106           007         Bell         39 27 047 8#039; '         71 47 107           010         Backspace         40 28 050 8#040; (         72 48 110           011         Horizontal Tab         41 29 051 8#041; )         73 49 111           012         Line feed         42 2A 052 8#042; *         74 4A 112           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113           014         Form feed         44 2C 054 8#04; ,         76 4C 114           015         Carriage return         45 2D 055 8#045; -         77 4D 115           016         Shift Out         46 2E 056 8#046; .         78 4E 116           017         Shift In         47 2F 057 8#047; /         79 4F 117           020         Data Link Escape         48 30 060 8#048; 0         80 50 120           021         Device Control 1 <td>002         Start of Text         34 22 042 " "         66 42 102 B           003         End of Text         35 23 043 # #         67 43 103 B           004         End of Transmission         36 24 044 \$ \$         68 44 104 D           005         Enquiry         37 25 045 % %         69 45 105 E           006         Acknowledgment         38 26 046 &amp; &amp; 70 46 106 F           007         Bell         39 27 047 ' ' 71 47 107 H           010         Backspace         40 28 050 ( ( 72 48 110 H           011         Horizontal Tab         41 29 051 ) ) 73 49 111 I           012         Line feed         42 2A 052 * * 74 4A 112 J           013         Vertical Tab         43 2B 053 + + 75 4B 113 K           014         Form feed         44 2C 054 , - 76 4C 114 L           015         Carriage return         45 2D 055 - - 77 4D 115 M           016         Shift Out         46 2E 056 . - 78 4E 116 N           020         Data Link Escape         48 30 060 0 0 80 50 120 P           021         Device Control 1         49 31 061 1 1 81 51 121 Q           022         Device Control 3         51 33 063 3 3 83 53 123 S</td> <td>  002   Start of Text   34   22   042   8#034;   "   66   42   102   8#066;   B   003   End of Text   35   23   043   8#035;   #   67   43   103   8#067;   C   040   End of Transmission   36   24   044   8#036;   \$   68   44   104   8#068;   D   005   Enquiry   37   25   045   8#037;   %   69   45   105   8#069;   E   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#071;   G   07   6   07   8#071;   G   07   6   07   8#071;   G   07   6   07   08   08   08   08   07   04   07   04   07   08   07   07   07   07   07   07</td> <td>002         Start of Text         34 22 042 8#034; "         66 42 102 8#066; B         98 62           003         End of Text         35 23 043 8#035; #         67 43 103 8#067; C         99 63           004         End of Transmission         36 24 044 8#036; \$         68 44 104 8#068; D         100 64           005         Enquiry         37 25 045 8#037; %         69 45 105 8#069; E         101 65           006         Acknowledgment         38 26 046 8#038; 8         70 46 106 8#070; F         102 66           010         Bell         39 27 047 8#039; '         71 47 107 48/074; G         103 67           010         Backspace         40 28 050 8#040; (         72 48 110 8#072; H         104 68           011         Horizontal Tab         41 29 051 8#041; )         73 49 111 8#073; I         105 69           012         Line feed         42 2A 052 8#042; *         74 4A 112 8#074; J         106 6A           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113 8#075; K         107 6B           014         Form feed         44 2C 054 8#044; -         76 4C 114 8#076; L         108 6C           015         Carriage return         45 2D 055 8#045; -         77 4D 115 8#077; M         109 6D           015         Shift Out</td> <td>  Start of Text   34 22 042</td>	002         Start of Text         34 22 042 " "         66 42 102 B           003         End of Text         35 23 043 # #         67 43 103 B           004         End of Transmission         36 24 044 \$ \$         68 44 104 D           005         Enquiry         37 25 045 % %         69 45 105 E           006         Acknowledgment         38 26 046 & & 70 46 106 F           007         Bell         39 27 047 ' ' 71 47 107 H           010         Backspace         40 28 050 ( ( 72 48 110 H           011         Horizontal Tab         41 29 051 ) ) 73 49 111 I           012         Line feed         42 2A 052 * * 74 4A 112 J           013         Vertical Tab         43 2B 053 + + 75 4B 113 K           014         Form feed         44 2C 054 , - 76 4C 114 L           015         Carriage return         45 2D 055 - - 77 4D 115 M           016         Shift Out         46 2E 056 . - 78 4E 116 N           020         Data Link Escape         48 30 060 0 0 80 50 120 P           021         Device Control 1         49 31 061 1 1 81 51 121 Q           022         Device Control 3         51 33 063 3 3 83 53 123 S	002   Start of Text   34   22   042   8#034;   "   66   42   102   8#066;   B   003   End of Text   35   23   043   8#035;   #   67   43   103   8#067;   C   040   End of Transmission   36   24   044   8#036;   \$   68   44   104   8#068;   D   005   Enquiry   37   25   045   8#037;   %   69   45   105   8#069;   E   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#070;   F   07   46   106   8#071;   G   07   6   07   8#071;   G   07   6   07   8#071;   G   07   6   07   08   08   08   08   07   04   07   04   07   08   07   07   07   07   07   07	002         Start of Text         34 22 042 8#034; "         66 42 102 8#066; B         98 62           003         End of Text         35 23 043 8#035; #         67 43 103 8#067; C         99 63           004         End of Transmission         36 24 044 8#036; \$         68 44 104 8#068; D         100 64           005         Enquiry         37 25 045 8#037; %         69 45 105 8#069; E         101 65           006         Acknowledgment         38 26 046 8#038; 8         70 46 106 8#070; F         102 66           010         Bell         39 27 047 8#039; '         71 47 107 48/074; G         103 67           010         Backspace         40 28 050 8#040; (         72 48 110 8#072; H         104 68           011         Horizontal Tab         41 29 051 8#041; )         73 49 111 8#073; I         105 69           012         Line feed         42 2A 052 8#042; *         74 4A 112 8#074; J         106 6A           013         Vertical Tab         43 2B 053 8#043; +         75 4B 113 8#075; K         107 6B           014         Form feed         44 2C 054 8#044; -         76 4C 114 8#076; L         108 6C           015         Carriage return         45 2D 055 8#045; -         77 4D 115 8#077; M         109 6D           015         Shift Out	Start of Text   34 22 042

```
65 41 101 A A 97 61 141 a a 66 42 102 B B 98 62 142 b b 67 43 103 C C 99 63 143 c c 68 44 104 D D 100 64 144 d d 69 45 105 E E 101 65 145 e e 70 46 106 F E 102 66 146 f f
```

```
c = 'a'
n = ord(c) #char -> decimal
print(c,n) #a 97

c = 'b'
n = ord(c) #char -> decimal
print(c,n) #a 98
```

### Tabela ASCII

Maiúsculo != Minúsculo

```
str1 = 'aAbBcC'
tam = len(str1)
for i in range(0,tam,1):
    c = str1[i]
    n = ord(str1[i])
    print(c, n)
```

### Exercícios

[LINK] Arrays - Strings